

APPEAL BRIEF UNDER 37 C.F.R. § 41.37

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Eric E. Del Sesto et al. Examiner: Christopher L. Parry

Serial No.: 09/754,650

Group Art Unit: 2421

Filed: January 03, 2001

Docket: 2050.013US1

For: INTERACTIVE CONTENT DELIVERY METHODS AND APPARATUS

APPEAL BRIEF UNDER 37 CFR § 41.37

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The Appeal Brief is presented in support of the Notice of Appeal to the Board of Patent Appeals and Interferences, filed on November 10, 2008, from the Final Rejection of claims 1-32 of the above-identified application, as set forth in the Final Office Action mailed on July 1, 2008.

The Commissioner of Patents and Trademarks is hereby authorized to charge Deposit Account No. 19-0743 in the amount of \$540.00 which represents the requisite fee set forth in 37 C.F.R. § 41.20(b)(2). The Appellants respectfully request consideration and reversal of the Examiner's rejections of pending claims.

1. REAL PARTY IN INTEREST

The real party in interest of the above-captioned patent application is the assignee, OPENTV, INC.

2. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to Appellant that will have a bearing on the Board's decision in the present appeal.

3. STATUS OF THE CLAIMS

The present application was filed on January 3, 2001 with claims 1-27. A non-final Office Action was mailed August 16, 2004. In a Response to non-final Office Action filed December 16, 2004, claim 28 was added. A Final Office Action was mailed June 6, 2005, and a Response to Final Office Action was filed August 2, 2005. An Advisory Action was mailed August 24, 2005, and a Request for Continued Examination (RCE) was filed September 6, 2005. A non-final Office Action was mailed December 1, 2005, and a Response to non-final Office Action was filed May 1, 2006. A Final Office Action was mailed August 28, 2006. A Notice of Appeal with Pre-Appeal Brief Request for Review were filed January 29, 2007, and a Decision on Pre-Appeal Brief was mailed on March 27, 2007. In a Response to Final Office Action filed with an RCE on September 27, 2007, claims 29-32 were added. A non-final Office Action was mailed December 13, 2007, and a Response to non-final Office Action was filed April 10, 2008. A Final Office Action was mailed June 24, 2008, and a Response to Final Office Action and Notice of Appeal were filed November 10, 2008. Claims 1-32 stand finally rejected, remain pending, and are the subject of the present Appeal.

4. STATUS OF AMENDMENTS

No amendments have been made subsequent to the Final Office Action dated June 24, 2008.

5. SUMMARY OF CLAIMED SUBJECT MATTER

This summary is presented in compliance with the requirements of Title 37 C.F.R. § 41.37(c)(1)(v), mandating a “concise explanation of the subject matter defined in each of the independent claims involved in the appeal ...”. Nothing contained in this summary is intended to change the specific language of the claims described, nor is the language of this summary to be construed so as to limit the scope of the claims in any way.

Aspects of the present inventive subject matter include, but are not limited to, a method and apparatus for delivery of interactive content. Paragraph numbers and page numbers below are with reference to the publication of the above-identified patent application (US 2007/0130581).

INDEPENDENT CLAIM 1

(Original claim 1 on page 10, Figures 2 and 6, [0013] page 2, [0033] page 4, [0045] page 6)

1. A system for providing interactive content comprising:
 - hardware adapted to receive one or more first video streams that include video data, first interactive content and an interactive content code, wherein the interactive content code includes an option field, and wherein the hardware is further to produce a second video stream;
 - an interactive content code detector adapted to detect the interactive content code and the option field therein, and based on the value of the option field, to produce a control signal to indicate the first interactive content is to be replaced with second interactive content; and
 - a data insertion unit adapted to receive the control signal and to insert the second interactive content into the second video stream to produce a third video stream.

INDEPENDENT CLAIM 8

(Original claim 8 on page 10, Figure 2, [0013] page 2, [0045] page 6, [0059] page 8)

8. A method for providing interactive content in a broadcast facility that transmits a video broadcast stream containing video along a transmission path for delivery to end users and contains equipment that may corrupt interactive content, the method comprising:

- encrypting an interactive content code to include with first interactive content, resulting in an encrypted interactive content code wherein the interactive content code includes an option field;
- inserting the encrypted interactive content code into a first video stream based on a value of the option field, resulting in a second video stream with embedded interactivity, wherein the encrypted interactive content code specifies second interactive content to replace the first interactive content;
- processing the second video stream, to produce a third video stream; and
- inserting the second interactive content corresponding to the interactive content code into the third video stream, to produce a fourth video stream, which includes the second interactive content and the encrypted interactive content code.

INDEPENDENT CLAIM 14

(Original claim 14 on page 10, Figure 2, [0013] page 2, [0045] page 6, [0059] page 8)

14. A method for providing interactive content in a broadcast facility that transmits a video broadcast stream containing video for delivery along a transmission path to end users and contains equipment that may corrupt interactive content, the method comprising:

encrypting an interactive content code, resulting in an encrypted interactive content code wherein the interactive content code is encrypted in a manner to prevent ad skipping and includes an option field;
inserting the encrypted interactive content code into a first video stream including first interactive content, resulting in a second video stream with embedded interactivity, wherein the interactive content code specifies second interactive content to accompany a video broadcast based on the value of the option field, and wherein the encrypted interactive content code is inserted into a region of the second video stream that is preserved by the broadcast facility;
processing the second video stream, to produce a third video stream; and
inserting the second interactive content based on the interactive content code and the option value into the third video stream at a point in the transmission path after a point in the transmission path where broadcast facility equipment that may corrupt the interactive content is coupled to the transmission path, to produce a fourth video stream.

INDEPENDENT CLAIM 17

(Original claim 17 on page 11, Figure 2, [0013] page 2, [0045] page 6, [0059] page 8)

17. A method for providing interactive content in a broadcast facility that transmits a video stream containing video for delivery along a transmission path to end users, the method comprising:

inserting an encrypted reference to second interactive content into a region of a first video stream including first interactive content, wherein the encrypted reference is encrypted in a manner to prevent ad skipping and includes an option field, and wherein the region is preserved by the broadcast facility, resulting in a second video stream with embedded interactivity;
processing the second video stream, to produce a third video stream; and
inserting the second interactive content based on the encrypted reference and the option field into the third video stream, to produce a fourth video stream.

INDEPENDENT CLAIM 19

(Original claim 19 on page 11, Figures 2 and 6, [0013] page 2, [0045] page 6, [0059] page 8)

19. A system for providing interactive content comprising:

- hardware adapted to receive a first video stream that includes video data, first interactive content, and one or more encrypted interactive content codes, and to produce a second video stream, wherein each encrypted interactive content codes is encrypted in a manner to prevent ad skipping and include an option field;
- an interactive content code detector, coupled to the first video stream, adapted to detect one or more interactive content codes identified within the one or more encrypted interactive content codes and to produce a control signal responsive to detecting and processing an interactive content code and its associated option field; and
- a data insertion unit, coupled to the interactive content code detector, adapted to receive the control signal and to insert second interactive content into the second video stream responsive to information contained in the control signal, resulting in a third video stream to be transmitted to one or more local subsystems, wherein the data insertion unit is positioned to insert interactive content into the second video stream prior to the third video stream being transmitted to a transmission source, causing the interactive content to remain in the third video stream upon transmission.

INDEPENDENT CLAIM 20

(Original claim 20 on page 11, Figure 6, [0013] page 2, [0046] - [0053] pages 6 - 7)

20. A system for providing interactive content comprising:

- local equipment, adapted to receive one or more first signals from a broadcast facility, wherein the one or more first signals include video data, first interactive content, and one or more encrypted interactive content codes, wherein the one or more encrypted interactive content codes are encrypted

in a manner to prevent ad skipping and include an option field, and
wherein the local equipment is further to produce a first video stream;
an interactive content detection unit adapted to detect an interactive content code
identified within an encrypted interactive content code and to transmit a
control signal responsive to detecting and processing the interactive
content code and the option field; and
a data insertion unit, coupled to the interactive content code detector, adapted to
receive the control signal and to insert second interactive content into the
first video stream responsive to information contained in the control
signal, resulting in a second video stream.

INDEPENDENT CLAIM 25

(Original claim 25 on page 11, Figures 2 and 6, [0013] page 2, [0045] page 6, [0059] page 8)

25. A method of ensuring reliable delivery of interactive content comprising:
inserting a plurality of encrypted interactive content codes including
corresponding option fields into different regions of data in a video stream
to be broadcast to a plurality of local subsystems, wherein the interactive
content codes correspond to an interactive content to be inserted into the
video stream based on values associated with respective option fields,
wherein the plurality of encrypted interactive content codes is encrypted in
a manner to prevent ad skipping, and wherein each region of data is
preserved by at least one local subsystem.

INDEPENDENT CLAIM 26

(Original claim 26 on page 11, Figure 6, [0052] page 7)

26. A method of ensuring reliable delivery of interactive content comprising:
inserting an encrypted interactive content code into a closed caption region
of a video stream, wherein a first portion of the interactive content code
corresponds to second interactive content to be inserted into the video stream to
replace first interactive content and a second portion of the interactive content

code includes an option field composed of conditions for replacing the first interactive content with the second interactive content, and wherein the closed caption region is preserved by at least one local subsystem.

INDEPENDENT CLAIM 27

(Original claim 27 on pages 11-12, [0045] page 6)

27. A method of increasing a reliability for delivery of interactive content, the method comprising:

inserting an encrypted interactive content code into a first component of a first signal alternate to a second component, which includes first interactive content and is used to convey the first interactive content, wherein the encrypted interactive content code is encrypted in a manner to prevent ad skipping and includes an option field;
processing the first signal, to produce a second signal;
detecting an interactive content code and the option field identified by the encrypted interactive content code in the first signal; and
inserting second interactive content corresponding to the interactive content code

into the second signal and based on a value of the option field, to produce a third signal.

INDEPENDENT CLAIM 29

(Original claim 27 on page 12, [0045] page 6)

29. A method comprising:

receiving a first video stream, the first video stream including video data, first interactive content, and an interactive content code;
generating a second video stream based on the first video stream;
detecting an option field in the interactive content code;
based on a value of the option field, selectively replacing the first interactive content in the second video stream with second interactive content to produce a third video stream; and
transmitting the third video stream to a destination.

This summary does not provide an exhaustive or exclusive view of the present subject matter, and Appellant refers to each of the appended claims and its legal equivalents for a complete statement of the invention.

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

§102 Rejection of the Claims

Claims 1-3, 5, 7 and 29-31 were rejected under 35 U.S.C. § 102(e) for anticipation by Kalluri et al. (U.S. Patent No. 5,937,331).

§103 Rejection of the Claims

Claims 6 and 32 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kalluri et al. (U.S. Patent No. 5,937,331) in view of Blackletter et al. (U.S. Patent No. 6,415,438).

Claims 4, 8-14, 17, 19-22, 24 and 27-28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kalluri et al. (U.S. Patent No. 5,937,331) in view of Hite (U.S. Patent No. 6,002,393).

Claims 15, 18 and 23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kalluri et al. (U.S. Patent No. 5,937,331) in view of Hite (U.S. Patent No. 6,002,393) as applied to claims 14 and 17 above, and further in view of Blackletter et al. (U.S. Patent No. 6,415,438).

Claim 16 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Kalluri et al. (U.S. Patent No. 5,937,331), Hite (U.S. Patent No. 6,002,393) and Blackletter et al. (U.S. Patent No. 6,415,438) as applied to claim 15 above, and further in view of Ciciora et al. ("3.3.5 Information Carried in the Vertical Blanking Interval," Modern Cable Television Technology, 1999, p. 101).

Claim 25 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Kalluri et al. (U.S. Patent No. 5,937,331) in view of Hite (U.S. Patent No. 6,002,393), in view of Blackletter et al. (U.S. Patent No. 6,415,438), and further in view of Ciciora et al. ("3.3.5 Information Carried in the Vertical Blanking Interval," Modern Cable Television Technology, 1999, p. 101).

Claim 25 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Kalluri et al. (U.S. Patent No. 5,937,331) in view of Hite (U.S. Patent No. 6,002,393), in view of Kaiser et al. (U.S. Patent No. 6,615,408), and further in view of Ciciora et al. ("3.3.5 Information Carried in the Vertical Blanking Interval," Modern Cable Television Technology, 1999, p. 101).

7. ARGUMENT

As discussed above, Appellants' invention as claimed is directed at a method and apparatus for delivery of interactive content. As discussed in the sections that follow, rejection of claims 1-3, 5, 7 and 29-31 under 35 U.S.C. §102(e) in view of Kalluri is improper. Furthermore, rejection of claims 1-3, 5, 7 and 29-31 under 35 U.S.C. §102(e) in view of Kalluri is improper.

A) The Applicable Law under 35 U.S.C. §102(e)

Under sub-section (e) of section 102, a person shall be entitled to a patent unless "the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for the purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language." 35 U.S.C. § 102(e).

A party asserting that a patent claim is anticipated under 35 U.S.C. § 102 (e) must show that "each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). To anticipate a claim, a reference must disclose every element of the challenged claim and enable one skilled in the art to make the anticipating subject matter. *PPG Industries, Inc. V. Guardian Industries Corp.*, 75 F.3d 1558, 37 USPQ2d 1618 (Fed. Cir. 1996). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

B) The Applicable Law under 35 U.S.C. §103(a)

Pursuant to 35 U.S.C. §103(a), "[a] patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." The determination of obviousness under 35 U.S.C. § 103 is a legal conclusion based on factual evidence. *See Princeton Biochemicals, Inc. v. Beckman Coulter, Inc.*, 7, 1336-37 (Fed. Cir. 2005).

Examiner has the burden under 35 U.S.C. § 103 to establish a *prima facie* case of obviousness. *In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988). To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. M.P.E.P. §2143.03 (citing *In re Royka*, 490 F.2d 981 (CCPA 1974)). "Mere identification in the prior art of each element is insufficient to defeat the patentability of the combined subject matter as a whole." *In re Kahn*, 2006 WL 708687, *9 (Fed. Cir. 2006). Such a teaching or suggestion must be supported by substantial evidence. *Id.* at *8. Substantial evidence is something more than a mere scintilla of evidence. *Id.* "Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *Id.* at *10 (quoted in *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727 (2007)).

Applicant can rebut a presumption of obviousness based on a claimed invention that falls within a prior art range by showing "(1) [t]hat the prior art taught away from the claimed invention...or (2) that there are new and unexpected results relative to the prior art." *Iron Grip Barbell Co., Inc. v. USA Sports, Inc.*, 392 F.3d 1317, 1322, 73 USPQ2d 1225, 1228 (Fed. Cir. 2004).

C) Rejection of claims 1-3, 5, 7 and 29-31 under 35 U.S.C. §102(e) in view of Kalluri is improper

Overview of Kalluri

Kalluri describes digital broadcast station that is configured to turn around and add interactive programming to a television signal originally conveyed by a remote network. The remote network inserts trigger commands within the vertical blanking intervals (VBIs) of the television signal to control the loading and playing of the interactive program at the broadcast station.¹ At the broadcast station, the trigger command (also referred in Kalluri as merely a "trigger") is extracted from the television signal and provided to an interactive program source. The interactive program source outputs an interactive program in accordance with the trigger. The interactive program is then combined with the television signal to be broadcast to end-users.²

Trigger in Kalluri is not "interactive content"

The term "interactive," in the context of broadcasting and receiving media, refers to explicit interaction between a user and a software package, e.g., as in allowing a viewer to directly control the provided video. The term "interactive content" is well known in the art to refer to content that permits interaction between a user and a computer system and is distinct from a condition or a command detected by a computer module that may cause the computer module to perform certain operations. For example, an automatically generated command that is automatically provided to a server is not "interactive content" because it does not contemplate any interaction with a user. Thus, a command extracted from a signal by a decoder that is then provided to a server that controls loading and playing of a program - such as the trigger discussed in Kalluri at 2: 50-54, 6: 40-49, Fig. 1, and throughout the specification - is not "interactive content."

In the Advisory Action, the Examiner does not address Appellants' explanation that "interactive content" refers to content that permits interaction between a user and a computer system. Instead, Examiner asserts that the trigger in Kalluri includes a command code that indicates the specific operation that is to be executed by interactive program source 58 and

¹ Kalluri, Abstract.

² Id., 5: 43-62.

concludes that said trigger thus reads on "interactive content" recited in claim 1.³ While the trigger in Kalluri can be provided to an interactive program source 58 to control the loading or playing of the associated interactive program,⁴ the trigger is not a part of an interactive program and does not in any way interact with a viewer. Therefore, as already explained in the previous communications, the trigger in Kalluri is distinct from "interactive content" recited in claim 1.

Therefore, Examiner's reliance on a trigger command of Kalluri to show "interactive content" recited in claim 1 is improper and it is respectfully requested that the rejections of claims that rely on a trigger as disclosing "interactive content" be reversed.

Reliance on a trigger in Kalluri to show three distinct elements of claim 1 is improper

As was already pointed out in the previous communications, Examiner cites the trigger in Kalluri to show three distinct elements of claim 1: a first interactive content, an interactive content code, and a control signal. The relevant portion of the detailed action (at pages 6 and 7) is reproduced below.

Regarding Claim 1, Kalluri discloses a system for providing interactive content (fig. 1, Col. 4, ll. 56-67) comprising: hardware (16 -- figure 1) adapted to receive one or more first video streams that include video data (from television signal source 12 -- figure 1), first interactive content (trigger from trigger generator 14 -- figure 1), and an

³ Advisory Action, page 2 .

⁴ Kalluri, 5: 47-50.

interactive content code (200 - figure 2), wherein the interactive content code includes an option field (206 - figure 2), and wherein the hardware is further to produce a second video stream (combined signal (television-trigger) output from trigger insertion unit 16 to modulator 18 shown in fig. 1) (Col. 5, lines 1-6 & lines 18-30; Col. 6, lines 1-13 & lines 40-49).

Kalluri further discloses an interactive content code detector (trigger extraction unit 56 - figure 1) adapted to detect the interactive content code (200 - figure 2) and the option field (original or repeat field 206 - figure 2) (Col. 5, lines 43-52), and based on the value of the option field (i.e., either "0" or "1"; Col. 6, lines 40-49), to produce a control signal to indicate the first interactive content (extracted trigger) is to be replaced with second interactive content (interactive program output from interactive program source 58) (Col. 8, lines 23-36).

Kalluri teaches a data insertion unit (interactive program source 58, data input unit 66, and AVI transmission unit 68 shown in figure 1) adapted to receive (from 56, Col. 5, lines 45-50) the control signal (extracted trigger from trigger extraction unit 56) and to insert (providing to AVI transmission unit 68 for combining with television signal, Col. 5, lines 53-62) interactive content (interactive program) into the second video stream (television signal output from A-V compression unit 64) to produce a third video stream (AVI signal, fig. 1) (Col. 5, lines 47-62).

In Kalluri, the trigger generator generates a trigger; this trigger is then inserted into a television signal, which is received at a VBI detector. The VBI detector extracts the trigger from the combined television signal and provides the trigger to a server. The server uses the trigger to control loading or playing of an interactive program.⁵

As is evident from the Examiner's language reproduced above, the "first interactive content" of claim 1 is shown by trigger from trigger generator 14 shown in Figure 1. A trigger generated by the trigger generator 14 is illustrated in detail in Figure 2 in Kalluri. In Figure 2,

⁵ Kalluri, 2: 31-53.

the trigger is identified by the reference numeral 200. The trigger 200 (which is the same trigger as the trigger generated by the trigger generator 14 of Figure 1) is cited by the Examiner to show the "interactive content code" of claim 1. Finally, as can be seen from the passage reproduced above, the Examiner cites "extracted trigger from trigger extraction unit 56," (which is the same trigger that was generated by the trigger generator 14 and is illustrated as element 200 in Figure 2) to show "control signal" that is produced, according to claim 1, *based on* an option field within the interactive content code. It is submitted that, first, as explained above, a trigger in Kalluri is not an interactive content and, second, a trigger in Kalluri cannot be treated simultaneously as "an interactive content code" and "a control signal" produced, according to claim 1, *based on* an element of that interactive content code.

In the Advisory Action, the Examiner sets out three points in response to Appellants' assertion that the Examiner's reliance on a trigger to show simultaneously "a first interactive content," "an interactive content code," and "a control signal" is improper. First, states Examiner, trigger 200 reads of "first interactive content" as trigger 200 is combined with television source 12.⁶ Second, continues Examiner, trigger 200 reads on "interactive content code" as trigger 200 contains a plurality of fields each containing code.⁷ With respect to this second point Examiner also states that trigger 200 *contains* "an interactive code," which makes it unclear whether the trigger 200 or one of the fields of the trigger 200 that constitute the trigger is correlated with "an interactive code." Third, explains Examiner, trigger 200 reads on "control signal to indicate the first interactive content is to be replaced with second interactive content" as recited in claim 1.⁸ Responding to the first point, as explained in detail above, the trigger in Kalluri is not a part of an interactive program, does not in any way interact with a viewer, and therefore is distinct from "interactive content" recited in claim 1. Responding to the second point, the Examiner appears to have changed his former reliance on the trigger to show "interactive content code" and now relies on one of the fields present in the trigger 200 to show this feature of claim 1. It will be noted, that claim 1 recites "the interactive content code includes an option field." None of the fields in the trigger 200 in Kalluri may be viewed as including an

⁶ Advisory Action, page 2.

⁷ Id., page 3.

⁸ Id., page 3.

option field. Examiner's reliance on a field included in the trigger 200 to show "interactive content code" is therefore improper. Responding to the third point set forth by the Examiner, that the trigger 200 itself is the "control signal" that is sent to interactive program source 58 and is used by the interactive program source 58 to control the loading or playing on the interactive program associated with the trigger, Appellants refer to the language of claim 1 requiring that the control signal is *produced based on* the value of the option field included in the interactive content code. Because the trigger 200 in Kalluri that is *received* by the interactive program source 58 cannot be considered at the same time to have been *produced by* the interactive program source 58, the trigger 200 does not read on "control signal" that is *produced based on* the value of the option field, as required by claim 1.⁹ Finally, the Examiner states that even though "a first interactive content," "an interactive content code," and "a control signal" are claimed as three distinct elements, the three distinct elements function as trigger 200 taught by Kalluri.¹⁰ As explained above, on one hand, the trigger 200 does not function like interactive content, does not include a code that has an option field, and is not *produced* based on the option field. On the other hand, as is indicated by precedents established by the United State courts, to anticipate a claim, a reference must disclose every element of the challenged claim,¹¹ where the identical invention must be shown in as complete detail as is contained in the claim¹² and the elements must be arranged as required by the claim.¹³ The Examiner did not provide authority that states that a claim may be anticipated by a reference that does not disclose all distinct elements recited in the claim.

Therefore, the Examiner's reliance on a trigger to show simultaneously "a first interactive content," "an interactive content code," and "a control signal" is improper and it is respectfully requested that the rejections of claims that rely on a trigger command as disclosing these three distinct elements of claim 1 be withdrawn.

⁹ Claim 1 recites "an interactive content code detector adapted to detect the interactive content code and the option field therein, and based on the value of the option field, to produce a control signal to indicate the first interactive content is to be replaced with second interactive content..."

¹⁰ Advisory Action, page 4.

¹¹ *PPG Industries, Inc. v. Guardian Industries Corp.*, 75 F.3d 1558, 37 USPQ2d 1618 (Fed. Cir. 1996).

¹² *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

¹³ *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Kalluri does not disclose all elements of claims 1 and 29

As explained above, there is no indication in Kalluri that the trigger itself comprises interactive content. Therefore, a television signal that includes trigger commands (as in Kalluri) is distinct from a video stream that includes "video data, first interactive content and an interactive content code," as recited in claim 1. Furthermore, the source television signal in Kalluri does not include interactive content until the interactive content is combined with the television signal in accordance with the trigger commands. It is submitted that an operation of including certain content into a signal is distinct from replacing first content with the second content. Thus, because, in Kalluri, interactive content is for the first time added to the television signal in accordance with the trigger commands, the operations to be performed by the interactive program source described in Kalluri (e.g., at 8: 23-36) do not include any operations "to produce a control signal to indicate the first interactive content is to be *replaced* with second interactive content," as recited in claim 1.

Thus, because Kalluri fails to disclose or suggest at least a first video stream that includes "video data, first interactive content and an interactive content code" and "an interactive content code detector adapted to detect the interactive content code and the option field therein, and based on the value of the option field, to produce a control signal to indicate the first interactive content is to be replaced with second interactive content," claim 1 and its dependent claims are patentable in view of Kalluri and should be allowed. It is respectfully requested that the rejection be reversed.

Claim 29 recites "the first video stream including video data, first interactive content, and an interactive content code" and "based on a value of the option field, selectively replacing the first interactive content in the second video stream with second interactive content to produce a third video stream." Thus, claim 29 and its dependent claims are patentable in view of Kalluri for at least the reasons articulated with respect to claim 1. It is respectfully requested that the rejection be reversed.

D) Rejection of claims under 35 U.S.C. §103(a) in view of combinations that rely on Kalluri is improper

Claims 6 and 32 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kalluri et al. (U.S. Patent No. 5,937,331) in view of Blackketter et al. (U.S. Patent No. 6,415,438). As discussed above with reference to claim 1, Kalluri fails to disclose or suggest "video data, first interactive content and an interactive content code" and "an interactive content code detector adapted to detect the interactive content code and the option field therein, and based on the value of the option field, to produce a control signal to indicate the first interactive content is to be replaced with second interactive content." This feature is present in claim 6 by virtue of its being dependent on claim 1. Blackketter discloses a trigger that is broadcast along with a television video and that may include a Uniform Resource Identifier (Blackketter, 8: 5015; 1: 18-30) and also fails to disclose or suggest these features, whether considered separately or in combination with Kalluri. Thus, claim 6 is patentable in view of the Blackketter and Kalluri combination and should be allowed. It is respectfully requested that the rejection be reversed.

Claim 32 includes the features of "the first video stream including video data, first interactive content, and an interactive content code" and "based on a value of the option field, selectively replacing the first interactive content in the second video stream with second interactive content to produce a third video stream" by virtue of its being dependent on claim 29. Thus, claim 32 is patentable in view of the Blackketter and Kalluri combination and should be allowed for at least the reasons articulated above. It is respectfully requested that the rejection be reversed.

Claims 4, 8-14, 17, 19-22, 24 and 27-28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kalluri et al. (U.S. Patent No. 5,937,331) in view of Hite (U.S. Patent No. 6,002,393).

Claim 4 includes the features of "hardware adapted to receive one or more first video streams that include video data, first interactive content and an interactive content code, wherein

the interactive content code includes an option field ...; an interactive content code detector adapted to detect the interactive content code and the option field therein, and based on the value of the option field, to produce a control signal to indicate the first interactive content is to be replaced with second interactive content; and a data insertion unit adapted to receive the control signal and to insert the second interactive content into the second video stream to produce a third video stream" by virtue of its being dependent on claim 1. Hite is directed at system and method for targeting TV advertisements to individual consumers¹⁴ and also fails to disclose or suggest these features, whether considered separately or in combination with Kalluri. Thus, claim 4 is patentable in view of the Hite and Kalluri combination and should be allowed. It is respectfully requested that the rejection be reversed.

Claim 8 recites "the encrypted interactive content code specifies second interactive content to replace the first interactive content." As explained above, with reference to claim 1, because the source television signal in Kalluri does not include interactive content until interactive content is combined with the television signal in accordance with the trigger commands, the operations to be performed by the interactive program source described in Kalluri do not include any operations to replace the first interactive content with second interactive content. This deficiency is not remedied by Hite, in which a video stream does not include any interactive content. While Hite refers to monitoring and reporting whether the receiving equipment powered and tuned to a specific channel, there is no hint of any of the commercials in Hite being in a form of a video stream that includes interactive content.¹⁵ Thus, claim 8 and its dependent claims are patentable in view of the Kalluri and Hite combination. It is respectfully requested that the rejection be reversed.

Claim 14 recites "inserting the encrypted interactive content code into a first video stream including first interactive content." As explained above, with reference to claim 1, the source television signal in Kalluri does not include interactive content until interactive content is combined with the television signal in accordance with the trigger commands. This deficiency is not remedied by Hite, in which a video stream does not include any interactive content. Thus,

¹⁴ Hite, Abstract.

¹⁵ Hite, 2: 44-65.

claim 14 and its dependent claims are patentable in view of the Kalluri and Hite combination. It is respectfully requested that the rejection be reversed.

Claim 17 recites "a first video stream including first interactive content." As explained above, with reference to claim 1, the source television signal in Kalluri does not include interactive content until interactive content is combined with the television signal in accordance with the trigger commands. This deficiency is not remedied by Hite, in which a video stream does not include any interactive content. Thus, claim 17 and its dependent claim are patentable in view of the Kalluri and Hite combination. It is respectfully requested that the rejection be reversed.

Claim 19 recites "hardware adapted to receive a first video stream that includes video data, first interactive content." As explained above, with reference to claim 1, the source television signal in Kalluri does not include interactive content until interactive content is combined with the television signal in accordance with the trigger commands. This deficiency is not remedied by Hite, in which a video stream does not include any interactive content. Thus, claim 19 is patentable in view of the Kalluri and Hite combination. It is respectfully requested that the rejection be reversed.

Claim 20 recites "the one or more first signals include video data, first interactive content, and one or more encrypted interactive content codes." As explained above, with reference to claim 1, the source television signal in Kalluri does not include interactive content until interactive content is combined with the television signal in accordance with the trigger commands. This deficiency is not remedied by Hite, in which a video stream does not include any interactive content. Thus, claim 20 and its dependent claims are patentable in view of the Kalluri and Hite combination. It is respectfully requested that the rejection be reversed.

Claim 27 recites "inserting an encrypted interactive content code into a first component of a first signal alternate to a second component, which includes first interactive content and is used to convey the first interactive content." As explained above, with reference to claim 1, the source television signal in Kalluri does not include interactive content until interactive content is

combined with the television signal in accordance with the trigger commands. This deficiency is not remedied by Hite, in which a video stream does not include any interactive content. Thus, claim 27 is patentable in view of the Kalluri and Hite combination. It is respectfully requested that the rejection be reversed.

Claims 15, 18 and 23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kalluri et al. (U.S. Patent No. 5,937,331) in view of Hite (U.S. Patent No. 6,002,393) as applied to claims 14 and 17 above, and further in view of Blackketter et al. (U.S. Patent No. 6,415,438).

Claim 15 includes the feature of "inserting the encrypted interactive content code into a first video stream including first interactive content" by virtue of its being dependent on claim 14. As explained above, this feature is not present in the Kalluri and Hite combination. Blackketter, whether considered separately or in combination with Kalluri and Hite, also fails to disclose or suggest this feature. Thus, claim 15 is patentable in view of the Blackketter, Kalluri, and Hite combination. It is respectfully requested that the rejection be reversed.

Claim 18 includes the feature of "a first video stream including first interactive content" by virtue of its being dependent on claim 17. As explained above, this feature is not present in the Kalluri and Hite combination. Blackketter, whether considered separately or in combination with Kalluri and Hite, also fails to disclose or suggest this feature. Thus, claim 18 is patentable in view of the Blackketter, Kalluri, and Hite combination. It is respectfully requested that the rejection be reversed.

Claim 23 includes the feature of "the one or more first signals include video data, first interactive content, and one or more encrypted interactive content codes" by virtue of its being dependent on claim 20. As explained above, this feature is not present in the Kalluri and Hite combination. Blackketter, whether considered separately or in combination with Kalluri and Hite, also fails to disclose or suggest this feature. Thus, claim 23 is patentable in view of the Blackketter, Kalluri, and Hite combination. It is respectfully requested that the rejection be reversed.

Claim 16 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Kalluri et al. (U.S. Patent No. 5,937,331), Hite (U.S. Patent No. 6,002,393) and Blackketter et al. (U.S. Patent No. 6,415,438) as applied to claim 15 above, and further in view of Ciciora et al ("3.3.5 Information Carried in the Vertical Blanking Interval," in *Modern Cable Television Technology*, 1999).

Claim 16 includes the feature of "inserting the encrypted interactive content code into a first video stream including first interactive content" by virtue of its being dependent on claim 14. As explained above, this feature is not present in the Blackketter, Kalluri, and Hite combination. Ciciora discloses information that may be carried in the vertical blanking interval (Ciciora, section 3.3.5). Ciciora, whether considered separately or in combination with Blackketter, Kalluri, and Hite, also fails to disclose or suggest this feature. Thus, claim 16 is patentable in view of the Blackketter, Kalluri, and Hite combination. It is respectfully requested that the rejection be reversed.

Claim 25 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Kalluri et al. (U.S. Patent No. 5,937,331) in view of Hite (U.S. Patent No. 6,002,393) in view of Blackketter et al. (U.S. Patent No. 6,415,438), and further in view of Ciciora et al ("3.3.5 Information Carried in the Vertical Blanking Interval," in *Modern Cable Television Technology*, 1999).

Examiner correctly stated that the combination Blackketter, Kalluri, and Hite fails to disclose or suggest inserting interactive content codes into different regions of data in a video stream. Examiner cites Blackketter to show this limitation. Blackketter describes broadcasting a duplicate trigger to make sure the trigger is received at the destination. It is submitted that broadcasting a trigger twice is distinct from "inserting a plurality of encrypted interactive content codes including corresponding option fields into different regions of data in a video stream to be broadcast to a plurality of local subsystems," as recited in claim 25. This deficiency of the Blackketter, Kalluri, and Hite combination is not remedied by combining Blackketter, Kalluri, and Hite with Ciciora, which refers to various information that may be carried in the vertical blanking interval (Ciciora, section 3.3.5). Thus, claim 25 is patentable in view of the

Blackketter, Kalluri, Ciciora, and Hite combination. It is respectfully requested that the rejection be reversed.

Claim 26 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Kalluri et al. (U.S. Patent No. 5,937,331) in view of Hite (U.S. Patent No. 6,002,393) in view of Kaiser et al. (U.S. Patent No. 6,615,408), and further in view of Ciciora et al ("3.3.5 Information Carried in the Vertical Blanking Interval," in *Modern Cable Television Technology*, 1999).

Claim 26 includes the feature of "conditions for replacing the first interactive content with the second interactive content." As explained above, this feature is not present in the Blackketter, Kalluri, and Hite combination. Ciciora, as well as Kaiser, directed at embedding a trigger in the vertical blanking interval (Kaiser, 6: 65-67 and 7: 1-4), whether considered separately or in combination with Blackketter, Kalluri, and Hite, also fail to disclose or suggest this feature. Thus, claim 26 is patentable in view of the Blackketter, Kalluri, Ciciora, Kaiser, and Hite combination. It is respectfully requested that the rejection be reversed.

SUMMARY

The reasons argued above are summarized as follows. First, Examiner incorrectly characterized a trigger in Kalluri as "interactive content." Second, Examiner incorrectly relied on a trigger in Kalluri to show three distinct elements of claim 1. Third, Kalluri fails to disclose every element recited in claim 1. Finally, the obviousness rejections that rely on combinations of references that include Kalluri are improper. For the reasons articulated above, with respect to claims 1-3, 5, 7 and 29-31, Examiner failed to make *prima facie* showing of anticipation under 35 USC § 102(b) in view of Kalluri. With respect to claims 4, 6, 8-28, and 32, Examiner failed to make *prima facie* showing of obviousness under 35 USC § 103(a) in view of combinations of references that include Kalluri. It is respectfully submitted that claims 1-32 are patentable over the cited art. Reversal of the rejection and allowance of the pending claims are respectfully requested.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 10 day of March 2009.

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Signature



8. CLAIMS APPENDIX

1. A system for providing interactive content comprising:
 - hardware adapted to receive one or more first video streams that include video data, first interactive content and an interactive content code, wherein the interactive content code includes an option field, and wherein the hardware is further to produce a second video stream;
 - an interactive content code detector adapted to detect the interactive content code and the option field therein, and based on the value of the option field, to produce a control signal to indicate the first interactive content is to be replaced with second interactive content; and
 - a data insertion unit adapted to receive the control signal and to insert the second interactive content into the second video stream to produce a third video stream.
2. The system of claim 1 wherein the data insertion unit is positioned to insert interactive content into the second video stream prior to the third video stream being transmitted to a transmission source, causing the second interactive content to remain in the third video stream upon transmission.
3. The system of claim 1 wherein a video stream generator generates the first video stream, and the interactive content code detector is coupled to an output of the video stream generator.
4. The system of claim 1 wherein the interactive content code is received in a different stream from a stream used to carry the video data.
5. The system of claim 1 in which the interactive content code detector and the data insertion unit are coupled to a same point in the transmission path.

6. The system of claim 5 wherein the interactive content code is a universal resource locator and the data insertion unit inserts an interactive content corresponding to the universal resource locator.

7. The system of claim 1, wherein the interactive content code is located in a vertical blanking interval of the one or more first video streams, and wherein the interactive content code detector includes a vertical blanking interval line reader.

8. A method for providing interactive content in a broadcast facility that transmits a video broadcast stream containing video along a transmission path for delivery to end users and contains equipment that may corrupt interactive content, the method comprising:

encrypting an interactive content code to include with first interactive content, resulting in an encrypted interactive content code wherein the interactive content code includes an option field;
inserting the encrypted interactive content code into a first video stream based on a value of the option field, resulting in a second video stream with embedded interactivity, wherein the encrypted interactive content code specifies second interactive content to replace the first interactive content;
processing the second video stream, to produce a third video stream; and
inserting the second interactive content corresponding to the interactive content code into the third video stream, to produce a fourth video stream, which includes the second interactive content and the encrypted interactive content code.

9. The method of claim 8 wherein inserting an interactive content further comprises inserting an interactive content corresponding to the interactive content code at a point in the transmission path after a last point in the transmission path where the interactive content may be corrupted.

10. The method of claim 8, further comprising reading the encrypted interactive content code at a point in the transmission path prior to an interactive content in the second video stream being corrupted.
11. The method of claim 8 wherein the embedded interactive content code is inserted into a region of the second video stream that is preserved by the broadcast facility.
12. The method of claim 8, further comprising reading the encrypted interactive content code, wherein the interactive content is inserted into the third video stream at a same point in the transmission path at which the encrypted interactive content code is read.
13. The method of claim 12, further comprising reading the encrypted interactive content code, wherein the encrypted interactive content code is read at a point in the transmission path after which broadcast facility equipment that may corrupt an interactive content is coupled to the transmission path.
14. A method for providing interactive content in a broadcast facility that transmits a video broadcast stream containing video for delivery along a transmission path to end users and contains equipment that may corrupt interactive content, the method comprising:

encrypting an interactive content code, resulting in an encrypted interactive content code wherein the interactive content code is encrypted in a manner to prevent ad skipping and includes an option field;

inserting the encrypted interactive content code into a first video stream including first interactive content, resulting in a second video stream with embedded interactivity, wherein the interactive content code specifies second interactive content to accompany a video broadcast based on the value of the option field, and wherein the encrypted interactive content code is inserted into a region of the second video stream that is preserved by the broadcast facility;

processing the second video stream, to produce a third video stream; and

inserting the second interactive content based on the interactive content code and the option value into the third video stream at a point in the transmission path after a point in the transmission path where broadcast facility equipment that may corrupt the interactive content is coupled to the transmission path, to produce a fourth video stream.

15. The method of claim 14 wherein inserting the encrypted interactive content code further comprises inserting a plurality of encrypted interactive content codes in different regions of the second video signal.

16. The method of claim 15 wherein at least one of the different regions is preserved by at least one local subsystem.

17. A method for providing interactive content in a broadcast facility that transmits a video stream containing video for delivery along a transmission path to end users, the method comprising:

inserting an encrypted reference to second interactive content into a region of a first video stream including first interactive content, wherein the encrypted reference is encrypted in a manner to prevent ad skipping and includes an

option field, and wherein the region is preserved by the broadcast facility,
-- resulting in a second video stream with embedded interactivity;
processing the second video stream, to produce a third video stream; and
inserting the second interactive content based on the encrypted reference and the
option field into the third video stream, to produce a fourth video stream.

18. The method of claim 17 wherein inserting the encrypted reference further comprises inserting an encrypted Universal Resource Locator, which includes a link to the second interactive content, into the region of the first video stream that is preserved by the broadcast facility.

19. A system for providing interactive content comprising:

hardware adapted to receive a first video stream that includes video data, first interactive content, and one or more encrypted interactive content codes, and to produce a second video stream, wherein each encrypted interactive content codes is encrypted in a manner to prevent ad skipping and include an option field;

an interactive content code detector, coupled to the first video stream, adapted to detect one or more interactive content codes identified within the one or more encrypted interactive content codes and to produce a control signal responsive to detecting and processing an interactive content code and its associated option field; and

a data insertion unit, coupled to the interactive content code detector, adapted to receive the control signal and to insert second interactive content into the second video stream responsive to information contained in the control signal, resulting in a third video stream to be transmitted to one or more local subsystems, wherein the data insertion unit is positioned to insert interactive content into the second video stream prior to the third video stream being transmitted to a transmission source, causing the interactive content to remain in the third video stream upon transmission.

20. A system for providing interactive content comprising:
- local equipment, adapted to receive one or more first signals from a broadcast facility, wherein the one or more first signals include video data, first interactive content, and one or more encrypted interactive content codes, wherein the one or more encrypted interactive content codes are encrypted in a manner to prevent ad skipping and include an option field, and wherein the local equipment is further to produce a first video stream;
 - an interactive content detection unit adapted to detect an interactive content code identified within an encrypted interactive content code and to transmit a control signal responsive to detecting and processing the interactive content code and the option field; and
 - a data insertion unit, coupled to the interactive content code detector, adapted to receive the control signal and to insert second interactive content into the first video stream responsive to information contained in the control signal, resulting in a second video stream.
21. The system of claim 20 wherein the data insertion unit is positioned to insert interactive content into the first video stream prior to the second video stream being transmitted to customer premise equipment, causing the interactive content to remain in the second video stream upon transmission.
22. The system of claim 20 in which the interactive content code detector and the data insertion unit are coupled to a same point in the transmission path.
23. The system of claim 20 wherein the interactive content code is a universal resource locator and the data insertion unit inserts an interactive content corresponding to the universal resource locator.

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24. The system of claim 20, wherein the interactive content code detector is a vertical blanking interval reader.
25. A method of ensuring reliable delivery of interactive content comprising:
- inserting a plurality of encrypted interactive content codes including corresponding option fields into different regions of data in a video stream to be broadcast to a plurality of local subsystems, wherein the interactive content codes correspond to an interactive content to be inserted into the video stream based on values associated with respective option fields, wherein the plurality of encrypted interactive content codes is encrypted in a manner to prevent ad skipping, and wherein each region of data is preserved by at least one local subsystem.
26. A method of ensuring reliable delivery of interactive content comprising:
- inserting an encrypted interactive content code into a closed caption region of a video stream, wherein a first portion of the interactive content code corresponds to second interactive content to be inserted into the video stream to replace first interactive content and a second portion of the interactive content code includes an option field composed of conditions for replacing the first interactive content with the second interactive content, and wherein the closed caption region is preserved by at least one local subsystem.
27. A method of increasing a reliability for delivery of interactive content, the method comprising:
- inserting an encrypted interactive content code into a first component of a first signal alternate to a second component, which includes first interactive content and is used to convey the first interactive content, wherein the encrypted interactive content code is encrypted in a manner to prevent ad skipping and includes an option field;
 - processing the first signal, to produce a second signal;

detecting an interactive content code and the option field identified by the
encrypted interactive content code in the first signal; and
inserting second interactive content corresponding to the interactive content code
into the second signal and based on a value of the option field, to produce a third signal.

28. The method of claim 8, wherein encrypting the interactive content code comprises
disarranging elements of the interactive content code to produce a scrambled interactive content
code.

29. A method comprising:

receiving a first video stream, the first video stream including video data, first
interactive content, and an interactive content code;
generating a second video stream based on the first video stream;
detecting an option field in the interactive content code;
based on a value of the option field, selectively replacing the first interactive
content in the second video stream with second interactive content to
produce a third video stream; and
transmitting the third video stream to a destination.

30. The method of claim 29, wherein the interactive content code is present in a region in the
first video stream that is preserved by a broadcast facility.

31. The method of claim 30, wherein the interactive content code is present in a vertical
blanking interval of the first video stream.

32. The method of claim 29, wherein the interactive content code is a universal resource
locator.

9. EVIDENCE APPENDIX

None.

10. RELATED PROCEEDINGS APPENDIX

None.